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ABSTRACT

The guide presents curriculum objectives of Project DEEP (Developing Exceptional Educational Potential), a resource room approach to the education of gifted elementary pupils. The first part of the handbook provides information on the background and foundation of a gifted curriculum (including such topics as student identification and needed teaching skills, and a brief annotated bibliography). Specific curriculum objectives are then presented for the following topic areas (sample subtopics in parentheses): language arts (creative writing, poetry, researching skills, and vocabulary); mathematics (problem solving, logic, and computers); foreign language; and community resources. Appended are a resource list and a description of an art museum experience. (CL)

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CURRICULUM HANDBOOK - PROJECT D.E.E.P.

DEVELOPING EXCEPTIONAL EDUCATIONAL POTENTIAL

BY

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True democracy demands that every child, whether superior, average, or inferior in ability be given the fullest opportunity to develop to the limit of his mental capacity. It is the gifted child, more than any other, who has hitherto lacked this opportunity. (Terman, unpublished, 1929)

INTRODUCTION

The education of the intellectually gifted student is justified by the significant margin that ranks these children's abilities above the middle ranks and their assumed social responsibilities in the future. The top 10% of the ability scale will benefit from appropriate educational experiences (Ward 1980:3). Research shows that intelligence is a combination of many processes (Guilford 1971:131). The need for effective instruction for gifted and talented children in a school system commences with a comprehensive set of goals and a corresponding identification system for the particular program (VanTassel 1980:31). It is documented that outstanding programs increase gifted children's productivity and mental well being (Ward 1980:4). For this reason each system should fill the drastic need for the proper organization of a gifted program. The planning of educational procedures for any selected segment of a population is extremely dependent on the principle characteristics of the designated academic pool (Ward 1980:4).

Several summaries and interpretations emerged from Lewis Terman's research on the gifted (Seagoe 1975:101). These interpretations are the basis from which this curriculum guide commences. Researchers repeatedly return to these interpretations and expand on the foundation that Lewis Terman so profoundly produced.

1. Gifted is defined as the upper end of the normal distribution of intelligence - the top 1%. He distinguishes both gifted and talented from creativity. Creativity being a separate entity from both terms. The identifying of this top group should take place no later than the first two years of schooling.

2. The society as a whole will benefit from developing the abilities of the gifted. Before his death in 1956, Terman discussed the notion of opening the narrow mold society sets for the able. Gifted children should be permitted to explore new fields and site problems and solutions society had not yet envisioned. A strong urge was made to make teachers aware of their prejudice against the gifted. The gifted will learn to hide their abilities for the sake of social acceptance.

3. Terman believed in individual testing for better individualized program planning.

4. Gifted should receive systematically differentiated instruction. The instruction should take form in concepts and principles rather than concrete facts. These were suggestions for strong emphasis in instruction.

a. Learn inductively rather than deductively

b. Responses on basis of logic and reason

c. Maximize new ideas and minimize review

d. Work independently with understanding and support

e. A need to build self confidence and a desire to excell

f. Should associate with other gifted students.

g. Strong emphasis that the gifted play with average students of their own age.

5. Teachers of the gifted should be specially trained in the area of gifted philosophy and education. The teachers must individualize, modify curriculum, stimulate interest, and teach all the steps of problem solving.

6. Acceleration is a reasonable method of aiding one's educational productivity. Enrichment, however, is a most desirable way of programming.

7. Gifted students need more adequate counseling than the average student. Being a gifted student increases their encounters with more varied and complex choices.

8. Gifted children need a high degree of society support. The gifted child has an extremely high sensitivity level which requires them to constantly seek approval.

The basis for any gifted curriculum is a total design for meeting the needs of an identified population. This differentiated instruction should be articulated and substantiated throughout the various levels of education (Vassar 1980:7). The curriculum needs to be in terms that are workable, however pulled from sources and research that have a theoretical basis.

Project D.E.E.P.

Project D.E.E.P. provides a resource room organization for the identified academic pool. The resource room allows for

academic acceleration and a strong independent working environment to be established. The resource room also enables a gifted student to return to his regular home base and socialize with children his own age level, average or below average abilities. A resource room also provides individual time for gifted students to be privately counseled. In the 1972 Report to Congress the U.S. Commissioner of Education, Sidney Marland, stated:

> Gifted and talented children are those identified by professionally qualified persons who, by virtue of outstanding abilities, are capable of high performance. These are children who require differentiated educational programs and/or services beyond those normally provided by the regular school program in order to realize their contribution to self and society.
>
> 1. General intellectual ability
> 2. Specific academic aptitude
> 3. Creative or productive thinking
> 4. Leadership ability
> 5. Ability in visual and performing arts
> 6. Psychomotor ability

More recently, in 1978, the following declaration by Congress appeared in the Gifted and Talented Children's Education Act: "The nation's greatest resource for solving critical national problems in areas of national concern is its gifted and talented children." For these reasons alone, each system should fill the drastic need for their proper identification and appropriate organization of a program. (See Appendix A)

STATEMENT OF THE PROBLEM

Servicing the gifted student has become an integral part of the Mishawaka School System. The need for a standardization of their program entitled D.E.E.P., Developing Exceptional Educational Potential, has surfaced. A comprehensive curriculum handbook encompassing curriculum objectives, teacher qualities, general program and theory background, and an annotation dealing with theory and objectives instructed was necessary for an organized program.

PURPOSE OF THE STUDY

The purpose of this project is to compile appropriate gifted differentiated curriculum objectives and materials into a comprehensive handbook thereby, providing information to educators, administrators, and resource teachers dealing with gifted students. The content areas of math and language arts will be covered. The identification system for this particular population along with the resource room concept is discussed. A portion of this handbook is an annotated bibliography. This will enable administrators, not acquainted with gifted education, to review present and past research in gifted education. This curriculum handbook will serve as a framework to house various specific activities and will cover grades 1-6,

ORGANIZATION OF THE STUDY

The basis for gifted education and the need for servicing this population was discussed in the beginning of this handbook. Lewis Terman dedicated his life to researching and observing the gifted child. His studies are therefore an important basis for the organization of this curriculum.

The method of programming is discussed with follow up annotations in alphabetical order. An identification and discussion is presented, followed by annotations. Each general section, math, language arts, and then objectives are followed by several annotations listed in alphabetical order. Foreign language and a community based objectives are annotated separately in alphabetical order.

This handbook was divided into three major sections. The first section being background and foundations of gifted curriculum. The second part of this guide provides the reader with logistics of the program and annotations relating to why the program was organized in this method. The last part of this guide will remain an ever working component in the education of the gifted. The objectives are broad and flexible to service the spectrum of gifted students 1-6. Activities and general units used to instruct these objectives will be added continuously to generate a complete curriculum that will instruct the objectives and provide the user of the guide with a generation of ideas.

LIMITATIONS OF STUDY

This handbook serves as a framework and foundation for Project D.E.E.P. General objectives and topics discussed were chosen because of research and writings available. Activities and units will be added to each general objective during the course of the year, therefore displaying an input of other resource teachers in the system. A general program evaluation is not included in this handbook due to conflict within the program as to which testing instruments will be used previous to the completion of this handbook. An evaluation will be established by the end of the 1983-1984 school year.

DEFINITION OF TERMS

Ability - actual power to perform or complete any given act. The response is voluntary and it is totally dependent on the subjects motivation. (Good 1973:1)

Ability grouping - grouping of pupils within classes or schools on the basis of some measured ability. (Good 1973: 269)

Acceleration - a system by which a student advances rapidly in his educational process. (Ward 1980:34)

Analytical method - a method of instruction of reading whereby the entire concept is taught presented then it is broken down into separate elements. (Good 59:29)

Affective - an area pertaining to the feelings or emotions. (Good 1973:194)

Classroom environment - the sum total of all the physical, social, emotional, and mental factors that contribute to the total teaching-learning situation. (Good 1959: 202)

Cognitive - the mental functioning involved in perceiving, knowing, and understanding, sometimes measured through the use of problems involving relationships. (Good 1973:310)

Creative dramatics - an art form which involves an informal, imaginative and intuitive expression of thoughts, ideas, and stories in a group experience situation. (Knuth 1961:343)

Creative problem solving - uniquely and originally solving problems using a wide range of conceptual and logical thinking abilities. (Feldhusen, Treffinger 1980:2)

Creative thinking - the ability to think of a lot of ideas or unique original ideas where a problem exists. (Feldhusen, Treffinger 1980:1)

Creativity - a quality thought to be composed of broad continua in which all members of the population may be placed in different degrees. The factors of creativity are tentatively described as associative and ideational fluency, originality, adaptive and spontaneous flexibility, and ability to make logical evaluation. (Good 1959:145)

Critical thinking - careful evaluation of evidence using objectivity and logic as tools for reaching conclusions. (Ward 1980:xliii)

Differentiation - a process by which a student's individual needs are met. Student instruction will differ as far as difficulty, interest and general content. (Good 1973:19)

Enrichment (horizontal) - unusual curricular topics not ordinarily instructed. (Good 1973:212)

Enrichment (vertical) - advanced work in specific curricular area. (Good 1973:213)

Evaluation - ascertain the value or amount of. (Webster 1972: 165)

Flexibility - a creativity factor wherein the subject's ability to detect hidden figures is measured, a restructuring of a given stimuli. (Good 1973:245)

Fluency - the speed and quality of association of ideas, facts, and concepts. (Good 1973:246)

Gifted - possessing high intellectual ability, with mental age well in advance of the norm, and consequently a high I.Q. (Good 1973:261)

Giftedness - a trait in an individual whose performance in a potentially valuable line of human activity is normally consistently remarkable. (Good 73:261)

Heuristics - having to do with the art of discovery; in learning and problem solving; pertaining to those methods by which one finds and applies strategies that may transfer across tasks. (Good 1973:280)

Homogenous grouping - the classification of pupils for the purpose of forming instructional groups having a relatively high degree of similarity in regard to certain factors that affect learning. (Good 1959:256)

Individualization - development of characteristics that differentiate between individuals through learning. (Good 1973:297)

Imagination - a catalyst that serves as a source of motivation for maximizing the potential of an individual. (Woods 1974:107)

Insipid - uninteresting; dull - lacking flavor. (Webster 1972:245)

Logic - in general, scientific (or systematic) study of the general principles on which validity in thinking depends; deals with propositions and their inferential interrelations. (Good 1958:325)

Metaphor - a figure of speech based on some resemblance of a literal to an implied subject. (Morehead 1972:290)

Originality - creative, inventive, a model, pattern or first and authentic example. (Webster 1972:323)

Precocious - characterized by unusually early development or maturity, especially in mental ability. (American Heritage 1976:1031)

Problem solving - a set of skills and abilities that are comprised into a complex set. (Feldhusen and Treffinger 1980:1)

Productive thinking - a divergent and convergent production that generates new ideas from information previously known.

SMPY - study of Mathematically Precocious Youth, John Hopkins University, Baltimore, Maryland.

Strategy - the art and science of developing and using maximum sources and resources in order to increase the probabilities and favorable consequences of success and to lessen the chances of defeat. (Good 1959)

Synectics - derived from a Greek word meaning the joining together and of different elements. (Torrance and Myers 1970:91)

DIFFERENTIATED EDUCATION

DISCUSSION

Major elements in differentiated education are acceleration, curriculum and environmental enrichment, administrative organization, and improved methodology (Gallagher 1975:91). Grade skipping is another element, however, it has been proven to enhance gaps in learning and psycho-social developmental problems (Stanley 1977). Generally, in discussion concerning successful programming for the gifted student, enrichment is favored over grade acceleration (Klausmeier 1963:105). A. differentiated curriculum allows for depth of fields to be studied, freedom of topics discussed, and personal preference for the students style of learning. A combination of appropriate level content areas and classroom enrichment is the balance which enhances a strong differentiated curriculum. "Properly conducted acceleration tends to be enriching, and appropriate enrichment is deliberately accelerative." (Stanley 1980)

Individualization has its merit when determining both learning content and rate of acceleration for a gifted student. More precise provisions for instruction can take place through individualization. Strengths and weaknesses are recognized through an individual diagnostic approach system (Meeker 1979: VII). In a survey of gifted experts, conducted by Joe Renzulli, the three most vital areas of a differentiated curriculum were,

the teacher (selection and training), a purposefully distinctive curriculum, and student selection.

> A curriculum design for the gifted student should be different in its greater stress on advanced conceptualizations and important ideas that cannot be easily grasped by students of similar age but of average or below average ability. Of top priority is the strategy to emphasize conceptual understanding of the basic principles and processes that lie at the heart of a discipline. (Gallagher 1975:9)

Project D.E.E.P

Project DEEP incorporates this balance within their resource room organization. Students are accelerated within the content areas of math and reading and they are enriched in the higher level thinking skills not instructed in their regular classroom.

IDENTIFICATION

DISCUSSION

"The values to the gifted individual and to his/her society will acure when identification and subsequent educational opportunities are well recognized." (Martinson 1974) Early identification of the gifted is extremely important for a population which shows advanced commitment and aptitude to learning and production (Martinson 1974:1). The identification process commences at kindergarten and serves as an ongoing identification system until eighth grade.

A theoretical model created by Alexinia Baldwin 1973:2) explains the three basic components that are significant to the performance of the student in an academically gifted program. Characteristics of gifted children fall into these categories; cognitive capacities for acquiring fundamental skills and knowledge, creative problem finding and solving skills, and personal characteristics. (Baldwin 1973:3)

Students in Project D.E.E.P. are identified as intellectually and academically gifted by using a multiple criteria instrument (Appendix B). In the area of cognitive abilities, Project D.E.E.P uses several testing data. The cognitive ability verbal score is used and the Iowa testing basic score in vocabulary, math concepts, spelling and interpretation of graphs.

To fulfill the personal characteristic component of the model the Project D.E.E.P. uses Renzulli Scales of Learning Characteristics and Creativity. Each scale, which there are ten, is based on research evidence. A shortcoming is that there are no norms provided with these scales. A school system must use local comparative data for interpretations. Four of the ten scales are used by Project D.E.E.P.

The third component of the theoretical model of Baldwin's deals with creativity. The instrument used in this area is the REACH Creative Problem Solving Test. (REACH Minn) This test is used in a pre and post situation. Four areas are interpretated into data. Flexibility, fluency, originality, and elaboration, are the four areas of creativity that the test evaluates.

The entire evaluation procedure relies heavily on the past and present opinion of the classroom teacher and the parents of the gifted student. Nomination by teachers was the most widely recommended method of identifying gifted students. However, it is of limited usefulness. Teachers tend to nominate either more girls or more boys by personal preference (Gallagher 1966:17).

A study conducted using teacher judgements alone on a kindergarten population resulted in identifying one in five students that later were identified as gifted on the Stanford-Binet (Gallagher 1966:17). A combination of teacher nomination and other various assessments will prove to be successful in identifying gifted students (Martinson 1975:15).

TEACHERS OF THE GIFTED

Project D.E.E.P. services elementary 1-6 grade students. Two resource teachers are housed in separate buildings. The teachers supervise a resource room servicing grades 1-3 and a resource room servicing grades 4-6.

The resource teachers are trained and qualified teachers of the gifted. The program serves 25-28 students per year, servicing the student for a three year long period. Scheduling is organized on a 40/60 basis. In other words, the student spends approximately 40% of his/her time in his/her regular classroom and 60% of his/her time in the resource room.

A vast amount of research has been collected concerning the teachers of gifted students. Research indicated that the high-esteem of a teacher has a significant correlation with student success (Aspy 1969). Teacher selection had the most influence on the gifted program (Clark, 1979).

A study was conducted to determine outstanding teacher qualities and those findings were reported (Clark 1974:327). Outstanding teachers had:

1. sense of humor
2. encouragement
3. knowledge of subject
4. firmness with fairness
5. knowledge of children

6. high sense of morality
7. reassuring qualities
8. recognition of individual
9. general enjoyment of teaching
10. creative characteristics: originality, flexibility, spontaneity, intuitiveness
11. high energy level
12. strong desire to teach gifted students
13. has ability to talk to community resource people
14. personal maturity
15 facilitates different modes of learning

(Aspy 1969)

June Maker (1982), indicates only three teacher qualities as being extremely desirable; high intelligence, knowledge of subject matter, and emotional maturity. Renzulli, (1975) ranked teacher selection as the highest critical factor in the success of a program.

The teacher of the gifted must create a constant positive attitude within the environment of the resource room. To keep this environment constantly motivational, inservice is an essential component. The teacher of the gifted is more effective if he/she is kept up-to-date on innovations in gifted education (Clark 1979:326).

If resource teachers want to become real resources to gifted and talented children then they must drastically reduce the amount of time that they spend instructing students and teaching lessons. A real resource person serves an individual student or a small group of students working on a common project.

A resource teacher should focus a student's attention to a researchable subject area. The critical feedback and additional help the teacher provides is crucial. The resource teacher is the main ingredient for channeling appropriate outlets for gifted students. (Renzulli 1980)

"Gifted children read to satisfy curiosity and to find models and idles to imitate."

(Terman 1926) Unpublished

GENERAL ANNOTATIONS

Cutts, Norma E., Moseley, Nicholas, Teaching the Bright and Gifted, Englewood Cliffs, New Jersey, Prentice Hall, Inc., 1957, 117 pp.

This particular book is dedicated to Lewis Terman's studies of the gifted child. The teaching of fundamentals are stressed before enrichment for the gifted student. Even though this book is certainly outdated, the concepts of dealing with skills in reading and math apply to the gifted student today. Though bright pupils have superior reasoning power one can not always assume that they understand every skill introduced. The gifted student cannot always be exceptional in every content area. Therefore when providing special programming for the students there must be a certain amount of flexibility. "Rapid progress" schools were discussed which took place in the University of Chicago Laboratory School, 1-8. One method of this rapid progress is not to skip any content but to group gifted together and simply cover the curriculum at a rapid pace.

Humes, W. Charles, "Gifted Students: A 15-year Longitudinal Study," Gifted Child Quarterly Vol. 21, #3, Summer 1980.

"Although the gifted appear to be receiving adequate attention in literature, longitudinal studies have been unrepresented." Charles Humes and Richard Campbell discuss a study which is a rare entity. Connecticut Public Schools are known for having the longest running gifted elementary programs in the United States. The research presented in this article deals with 100 adults that were once participants of this Connecticut program. They were collectively pooled from their participation between 1961 through 1970. Therefore these students graduated between 1968-1976. Background data was collected on each participant. Results were quite considerable. A total of 100 were completed with the questionnaires appropriately filled out. The age span was 18-26. There were 40 males and 60 females. National honors scholarships were won by 28, 15 National Merit and 36 National Honor Society. Of the questions discussed on the questionnaire the most substantial data concerning diverse activities in a resource room. 54% of the participants rated that particular aspect of their gifted programming as having the most influence on their educational careers. The final conclusion drawn from this study states that longitudinal studies would increase effectiveness in programming for the gifted student.

Renzulli, Joseph, "What Makes Giftedness?" Phi Delta Kappan, November 1978, 180 pp.

Renzulli views the numerous spectrum of "gifted" definitions as if they were on a continuum ranging from "conservative" to "liberal." Lewis Terman is described to be at the conservative end of the continuum. His definition of the gifted population only includes the one percent of the population. Paul Witty on the other hand (liberal) defines giftedness as "whose performance in a potentially valuable line of human activity is consistently remarkable." Research shows that no one criterion for identification should be used to identify the gifted population. A set of 3 interlocking traits is usually used to point out the multi-faceted characteristics of the gifted child. The three ingredients are task-commitment, above average ability and creativity. The interaction between these three areas creates human giftedness.

Renzulli, Joe, "Will the Gifted Movement Be Alive and Well in 1990," Gifted Child Quarterly, Vol. 24, No. 1, Winter, 1980.

Curriculum's wide scopes in gifted programming are discussed in this article. Renzulli indicates that the educators are dealing with process models to facilitate instruction in the resource rooms. Relying on Bloom's (1950) hierarchical structure of educational objectives is not the solution to any programs structure. Bloom's taxonomy is a taxonomy. It is a hierarchical organization in which each step is dependent of the other. Bloom's level 1.20 (1956), knowledge of methodology, is essential to the gifed students instruction. Teaching the top three levels, analyzing, synthese, and evaluation, is impossible to do unless the entire taxonomy is taught. Renzulli describes in detail the role of the resource teacher. First, the resource teacher must "reduce time spent teaching lessons, help students focus on frame an area of interest into a researchable problem, help youngsters obtain appropriate resources, provide critical feedback, and help the child find appropriate outlets and audiences for his or her creative work."

Tuttle, B. Frederick, Gifted and Talented Students - What Research Says to the Teacher, Educational Resources Information Center, ED 161 222, National Education Association, Washington, D.C., 1978, 33 pp.

This particular study is divided into three sections, identification, programming and current issues in figted education. Tuttle believes that past research must be consulted before programs are established. He has examined the research and attempted to answer some very basic gifted and educational questions. Paul Torrance's research and evaluation development of an identification instrument measuring creativity is divided into six areas. Tuttle emphasizes the need for such an instrument when identifying creative abilities. The areas discussed are flexibility, fluency, elaboration, originality, synthesis and closure. Researchers can also obtain similar data using inventories, checklists and rating scales. Program development can take shape in three basic models; enrichment, homogenous grouping and acceleration. In all three situations a differentiated curriculum is instructed. From these three program organizations, researchers state, homogeneously grouped situations better than gifted in heterogeneous classes. Those who oppose this grouping have relied on opinion rather than evidence (Martinson 1972). Curriculum design should proceed methodically through a step by step procedure emphasis higher level, flexible objectives.

Vail, Priscilla L., The World of the Gifted Child, New York, Walker and Company, 1979.

According to the author, the gifted student needs to have his/her academic and emotional needs met. The author interviewed seven gifted people from 6 to 75. Vail asked each person what three wishes they would ask for in life. Their answers were diverse, however one common denominator, challenge. They wanted to be challenged. Several key points were mentioned in reference to needs being met. These points were, expansion of knowledge, identification with characters of similar abilities, bibliotherapy, one's own dilemma resolve in a story, and experiences with intellectual pleasure. Vail expressed the idea that language is "contagious" for the gifted child. Language is used as a platform to build, create and expand on abstract ideas. The zest and sparkle that these children bestow upon their environment only embellishes our world.

Ward, Virgil S., Differential Education for the Gifted: A Synopsis of Principles, Office of Superintendent of Schools, Ventura, CA, 1980.

Ward elaborated on twelve major propositions dealing with the education of the gifted. The first proposition indicated that any curriculum established within a school system must be developed from a balance between educational philosophy and opinions based on experience. He feels that the curriculum should contain certain experiences that enhance a student's personal civic and social intellect. Ward states that the teacher of the gifted should, in essence, be gifted also to deal with such intellect. The curriculum should also be designed in a manner that leaves room for flexibility and additions. Foundations of our civilizations should most certainly be stressed in the teachings of the fundamentals. An integral part of the education of these individuals should be personal and social adjustments.

Witty, Paul A., "The Education of the Gifted and the Creative in the U.S.A.," Gifted Child Quarterly, Vol. XV, No. 2, Summer 1971.

In this article Paul Witty scans the entire history of gifted education commencing with L. M. Terman and Melita H. Oden's genetic study of the gifted. In his investigation of intelligence quotas he quotes Terman findings. "Close to 70% entered college, 30% were awarded honors and 2/3 remained for graduate work. This data was taken from a pool of identified gifted students before they entered high school. Witty states that programming for these students commences in the home with strong parent support. Witty placed strong emphasis on the school systems neglect of serving the needs of the gifted and talented. Despite measurable gains, there continues to be a vagueness when clarifying the actual curriculum being used to service the gifted. Creativity has not reached a stage where it is properly cultivated or where the presence of its instruction is appreciated.

LANGUAGE ARTS

GENERAL DISCUSSION

Lewis Terman examined various aspects of reading abilities and interests of the gifted subjects he studied. Research indicates that successful men devoted a majority of their time during childhood to reading and developing their skills in reading (Terman, Oden 1921:25). Terman discovered that 50% of the gifted population studied, read before the age of 6, 20% read before the age of 5, 6% before the age of 4, and 1.3% before the age of 3. Most of these children learned to read without formal instruction (Terman 1921:25). Terman also discovered this same population were constant readers. These children at the age of seven read six hours a week and this rate slowly increased to 12 hours at the age of 13. Terman determined the peak reading age of the gifted student, as far as wide interest areas, at 17.

All gifted children have the potential to produce at one point in their life one of the following, complete development of a specific talent, superior intelligence test scores, excellence in various academic areas, or development of a creative response to their environment (Fliegler 1961:219). Enriched reading is usually the outlet for such a student. This student usually has an extensive vocabulary, above average reading ability and a large span of reading interests. This

particular child has spontaneously taught himself to read using his superior memory and sight word methods of teaching reading (Fliegler 1961:225).

Characteristic of the gifted student eliminates several methods of instruction in the area of language arts. Repetions drill activities, manual aspects of their penmanship, and large group functions are three most avoidable activities.

The gifted student is most likely to concentrate on hidden meanings in literature, research activities, questioning the author's purpose for writing, and evaluating the information (Thomas and Crescmbeni 1966:139). The gifted child is original, spontaneous, and flexible to his search for meaning in literature (LaBuda 1974:6). In this search for meaning in literature the gifted student is building a concept of our society in which their roles are an essential component.

The most basic principle of concentrated instruction in language arts for the gifted and talented is our literary heritage. Understanding of skills and evaluation processes will enable these students to continue their appreciation for the classics and extend their communication maturity (Huck and Kuhn 1968:15).

The gifted student has an inner need to create (Torrance 1965). Literature can guide this student towards maturity and developing confidence in his ownself. Literature is a foundation for character development and can lead a child to conformity or individuality (Huck and Kuhn 1968:15).

Two basic areas of language arts have been suggested as basic to a gifted student's curriculum, Cognitive and Affective (Gowan and Scheible 1960:35). Cognitive goals deal with increasing the rate of reading material that the student consumes. Comprehension of this material is the key to instruction, not vocabulary. Higher level reading material should be used. The affective goals in programming in language arts are basically to assure the gifted reader is discriminating his reading materials. In other words, the reader will be selecting materials which enhance his reading abilities and social maturity. Lewis Terman's initial study of gifted readers was a book called Children's Reading (1926). This study indicated that gifted students read to find models to imitate. The students studied, enjoyed reading, action, imagination, humor, and specific funny incidents. These qualities can be found in bad reading as well as classic literature. Terman suggests that gifted instruction in the reading areas should constantly guide the reader towards "desirable books." Terman's studies indicate the promotion of the nonfiction and biographies in the literary world.

Language arts instruction should provide extensive resources, a systematic method of discovery, promotion of intellectual inter-peer stimulation, and should have a balance between emotional and academic maturity (Fleigler 1961:213).

The environment in this content area should emphasize independence. Gifted students learn from experimenting, questioning and knowing their exact task. Their objectives must have a purpose that responds to a certain aspect of our environment (Torrance 1965:38). A curriculum that is best suited for this student works as a spiral. It is a curriculum that turns it back on itself at higher and higher levels of complexity (Torrance 1965:39). Inside the spiral is a horizontal program which encompasses units of diverse interests, demonstrations and outlets for accomplished products to be shared. Students will learn to accept teacher and peer criticism when displaying their accomplishments (Kough 1960).

Project D.E.E.P.

The language arts curriculum in Project D.E.E.P. is based on ten basic objectives. Each general objective will include diverse accumulations of individual student and group activities. This section of the handbook is continuous. New and reorganized activities will be added periodically. These objectives were chosen because of sound research and accumulated writings in the specified areas. The vast amount of curriculum needed for a differentiated curriculum opposed to the limited amount of instructional time deems it necessary to limit the objectives to areas of concentrated research.

OBJECTIVE #1

THE PRECOCIOUS READER SHOULD SHARE THE EXPERIENCES OF READING GREAT LITERATURE ON THEIR APPROPRIATE READING LEVEL.

Discussion

Gifted readers should be grouped according to their measured reading abilities. In a study conducted with precocious readers, test scores displayed that gifted students benefited from exposure to the classics. Insipid content reading was a measurable waste of time for these students (Bagford 1981). A major component of this literary area is biographies. Biographies possess the struggle between strengths and weaknesses of the human race. Biographies display to the gifted reader that everyone has the ability to serve for the goodness of man in this world. Man takes shape of his own destiny (Huck and Kuhn 1968).

From the ages of six to twelve, gifted children commence building values and attitudes towards themselves. The child attempts to develop a conscience. The relationship between this development and identification with successful main characters is significant in helping him/her obtain their personal goals (LaBuda 1974). Biographies enhance the development and expansion of new goals and interests (Huck and Kuhn 1968). Of major importantce, however, is the relationship between respect for intelligence and the accomplishment of

many gifted leaders and inventors. These people are admired and gifted children should feel as if their intelligence is of great value to our society.

Another area of importance is realistic fiction. Through fiction, other people are encountered that have certain problems, just as the gifted child may be experiencing. The student sees these characters conquer the problems they encounter (LaBuda 1974). Anxieties a gifted student may have in their own lives may serve as a bridge to many characters encountered in fictional writings. The communication of real life emotions is essential to their literary materials (Huck and Kuhn 1968:17).

An independent reading program will best meet these instructional needs. An independent reading program allows for freedom, within boundries, for selection of classical literature at appropriate level.

Research indicated that gifted students utilizing an independent reading program derived these benefits:

1. Can proceed at own pace
2. Develops positive teacher relationship
3. Experiences success and improved self-esteem
4. Becomes responsible for their own reading
5. Have freedom of selection
6. Can discuss their reading with other gifted students.

An independent individualized reading system also allows the instructor of the gifted many benefits:

1. The program provides time for the instructor to meet individual need in skill areas
2. Individual time on a one to one basis for critical issues
3. Structured program for weakness and strengths in analyzing student work
4. Teacher becomes director (Barbe)

"Great" Literature encompasses biographies, award winning literature and the classics. See Appendix C (Huck 1976:761).

General Evaluation:

The student will keep a running tabulation of the "great" literature he/she has read during a one year period. This list will be used to conference and guide the students into areas of literature not yet explored.

Seven general areas will be discussed during conference times concerning the comprehension of each book. The areas are: (Huck and Kuhn 1976:17)

Plot - well constructed or not

Setting - time period

Theme - overpowering or nonexistent

Characterizations - covincing or weak

Style - appropriateness to subject

Format - are illustrations an extension to story

Other Considerations - comparing one classic to another

OBJECTIVE #2

THE STUDENT WILL DEVELOP AN APPROPRIATE STYLE AND FLAIR FOR EXPRESSING THEIR SUPERIOR LANGUAGE ABILITY THROUGH CREATIVE WRITING.

DISCUSSION

"Creative writing makes a measurable contribution to our society. In an age of science and a world of tensions there is a special need for literature which interprets man to man, and to himself." (Strang 1961:23) There are several components of creative writing. These components are essential to the instruction of this objective. Strong provides this comprehensive list:

1. Sensitivity to the world of nature and the world of man and to the problems inherent in these worlds. This sensitivity is the spring of creative writing.

2. Keen perception of significant details in the environment. A poem or a short story usually stems from an emotionally perceived experience such as the song of a solitary bird at twilight.

3. Ability to see relations between perceptions and ideas, to combine and arrange them into original and coherent patterns. The writer relates the plaintive song of the bird to the general sadness and sorrow of human life.

4. Ability to see and express the uncommon. Creative writing is identified by its unique, vivid expression.

5. Fluency of ideas. When the writer is in the inspiration stage, apt associations spontaneously occur to him.

6. Acceptance of discipline necessary to master the techniques by means of which ideas may be expressed. Revising the first draft is hard, scholarly work.

7. Flexibility in modifying an accepted idea or an established pattern. Something original is added by the writer who is truly creative.

8. Wholehearted attention and concentration on the task. Children engaged in creative writing are absorbed in the process.

9. Objectivity and judgment in appraising one's products. Writers realize that continuous appraisal is necessary to improve their product.

10. Satisfaction in the creative process. Many writers have found their highest happiness in the process itself.

11. General intelligence is also a factor in creativity.

Instruction of creative writing requires a teacher with the innate ability to establish a conducive environment to inspire a generation of ideas. This environment surrounding the gifted student is essential to their productivity concerning creative writing. Creative writing is an expression of individuality that is sparked only when the individual is in a relaxing surrounding. A stimulating experience, verbal open opportunities, and accepting atmosphere, are all positive aspects of a creative writing environment.

Past research was meager concerning creative writing and the gifted student. In one study conducted on fifth and seventh

grade students, Alvina T. Burrows (1959) arrived at one prominent conclusion after reviewing the data. The growth of creative writing was dependent on the stimulus of the students' instructor. Some of the characteristics of the gifted student such as, extensive vocabulary, flexibility, fluency, and originality lend helping tools when elaborating on an idea. Creative writing helps develop the powers of creative thinking (Torrance 1965).

Having students write short stories that are analyzed critically and noncritically raises their standards of writing. Reading fine literature, in conjunction with writing to solve realistic or imaginary problems, helps create a confidence that solutions can be obtained in a satisfying, valid, and interesting way (Fliegler 1961). Provisions should be made to recognize and reward creative writing abilities (Strang 1953:23).

General Evaluation:

Evaluation of this objective will utilize the students' original writings. The student will keep a progressive folder including one final piece of writing completed each month of the school year. He/she will include in this folder his/her initial goals, the final teacher assessment and the final evaluation (Mindell, Stracher 1980:75).

A checklist composed of seven skill areas will be utilized to analyze the students progress (Mindell 1980:72). They are:

1. Sentence Structure
   Punctuation
   Grammar
   Sentence Variation
2. Spelling
3. Vocabulary
4. Thesis Development
5. Literary Style
6. Technical Ability

OBJECTIVE #3

THE STUDENT WILL WRITE AND ANALYZE POETRY TO ENHANCE DIVERGENT THINKING, IMAGINATIVE WRITING, AND ILLUMINATING EVERYDAY EXPERIENCES.

DISCUSSION

Poetry develops an openness and strong self-confidence within the gifted student (Huck and Kuhn 1968:309). There is a great deal of curiosity in poetry. For the gifted student, unusual word combinations, unique rhymes, unclear motives, are reason why poetry demands more abstract thinking processes. Poetry fosters creativity and in doing so, tempts the child to be as original as possible. Perception into uncommon relationships leads the student to be creative with words, therefore, requiring a flexibility and fluency of words that perhaps had not been stimulated before (Huck and Kuhn 1968). A high level of exposure to poetry increases the gifted students respect for the language. Experiences, imaginary happenings can be readily recaptured if the student is aware of how to relate his/her memories in an expressful manner (Huck and Kuhn 1968:310). In general, poetry stimuli affects diverse ways of reaching his/her own potential (Vida 1978:14). Poetry builds a gifted child's confidence in his reading ability, and develops his language, his critical, and his analytical skills. As poetry is meant to be read for enjoyment, it subconsciously makes a child want to read. Thus, poetry develops his/her interest.

Poetry also makes him/her aware of the influences of language on behavior and shows him/her that words can change from time to time, from place to place, and from situation to situation (Vida 1978:14).

GENERAL EVALUATION

Poetry written in the classroom is evaluated by language originality in comparison to the group (Mindel, Stracher 1980: 74). A collection of poems will be compiled each year by the students.

OBJECTIVE #4

THE STUDENT WILL BROADEN HIS/HER LEARNING EXPERIENCES IN IMAGINATION BY PARTICIPATING IN CREATIVE DRAMATICS.

DISCUSSION

Creative dramatics, or make-believe, is the result of using unique creative forms to handle a given situation. This experience aids gifted children to becoming spontaneous with their original thoughts (Woods 1974:109). Creative dramatics establishes an environment which enables the student to physically act out some mental thoughts he may question about his/her own society.

J. L. Moreno (1945) suggests several techniques in teaching talented students creative dramatics (1945:190).

1. Direct Presentation Techniques -
   Children must solve and recreate a problem situation in a limited amount of time.
2. Soliloquy Techniques -
   In this situation one actor will verbalize his feelings about a given situation.
3. Double Techniques -
   This situation places the actor in a setting in which he/she is alone. The child has another actor with him/her who is his/her conscience. The actor talks openly to his/her conscience to solve a problem.

4. Multiple Double Techniques -

   This situation relies on the actor having other actors portray different parts and emotions of himself. They can also be divided by his/her past and future ages.

5. Mirror Techniques -

   One actor must display how the world perceives another actor to his face. This is a difficult technique.

6. Role Reversal Technique -

   This dramatic situation merely switches characters. If a boss and employer are arguing or discussing some matter, then suddenly the boss becomes the employer (Moreno 1945:190).

Creative dramatics has tremendous impact on personal development. Dramatics is a social art in which people become the medium of expression (Knuth 1961:343). Emotional tensions, which are at a higher level with gifted students, are often released with role playing. Research indicates that there is a more noticeable growth in the areas of communication, sensitivity, and awareness, when the child is actively involved in creative dramatics. "Creative dramatics discovers, fosters, and releases all degrees of creative inspiration and talent" (Knuth 1961:348).

Creative dramatics hinges upon group cooperation. This quality develops the child physically, mentally, emotionally, and socially (Knuth 1961:340). Children's theater is the art form which provides the dramatic experience to become a product. Gifted students should have the opportunity to act in front of an audience (Knuth 1961:349).

GENERAL EVALUATION

The student will be given the opportunity to develop a creative dramatic role. The evaluation will be based on enthusiasm, cooperation, characterization, interpretations and creative freedom.

OBJECTIVE #5

THROUGH GROUP ORGANIZATION AND COMMITMENT THE STUDENTS WILL USE SYNECTICS TO CREATIVELY SOLVE PROBLEMS.

DISCUSSION

Synectics means to join two irrelevant elements together. This approach to problem solving integrates a wide range of students into one problem-solving and problem stating situation (Gordon 1961:3). Research indicates that "creative efficiency in people can be markedly increased if they understand the psychological process by which they operate (Gordon 1961:5). Researchers discovered that for problem solving, as well as creative processes, a group has advantages over an individual. "Synectics groups can compress into a few hours the kind of semi-conscious mental activity which might take months of incubation for a single person" (Gordon 1961:10). The reason for this being is when an individual expresses an idea, the group is able to analyze the idea immediately.

Synectics is an important ingredient to any gifted curriculum. Three basic tools are used to commence a synectics group session.

1. Play with words, meanings and definitions
2. Play with pushing a fundamental law or basic scientific concept to its limits
3. Play with metaphors (Gordon 1961:30).

The group relies on four basic metaphors for joining two unlike objects together (Gordon 1961:35).

1. Personal Analogy -

   The group tries to identify with the elements in problem their own personal way.

2. Direct Analogy -

   This describes the comparison of parallel technology or facts. The examples given by Gordon was the invention of the telephone and the human ear. Alexander Bell used direct analogy.

3. Symbolic Analogy -

   Impersonal and objective images are used to describe the problem.

4. Fantasy Analogy -

   The group uses far-fetched ideas and fantasies to generate ideas for practical solutions to the problem. The far-fetched ideas are brought down to feasible solutions.

These basic metaphors of synectics can be appropriately incorporated into many content areas. This form of problem solving enhances a child's generation of spontaneous fluent ideas. The major ingredient of creative processes is our subconscious. Synectics reaches this area and therefore attempts to heighten the creative potential of each student.

Synectics can be divided into these four areas so as to not press time limits of any of the specified areas. The instructor has to create a flowing environment with little restrictions on time. During the time a synectics problem is being worked through, many other concepts are being introduced. Spontaneous reaction, problem analysis, metaphorical thinking, and role-playing are all active during the action. The instructor plays a vital role in incorporating these concepts into the process. Research indicates that most students find synectics-type procedures beneficial in areas where problem solving techniques are needed (Gordon 1961:23).

GENERAL EVALUATION

The student, through a synectics group, will be evaluated on originality, completeness, and his/her success in making something very familiar, strange. The final product is a working model that has a certain function. The students will be evaluated as a group, not individually (Gordon 1961:31).

OBJECTIVE #6

THE STUDENT WILL INCORPORATE HIS/HER ABILITIES OVER AND BEYOND TRADITIONAL AREAS IN STUDY SKILLS WHICH ENCOMPASS ALL ASPECTS OF FINDING AND ORGANIZING INFORMATION.

DISCUSSION

Gifted students can utilize skills such as skimming, scanning, previewing, and changing the rate of speed, depending upon materials to be comprehended. Students who read well need to know how to outline, organize, and use advanced uncommon resources (Mindell, Stracher 1980:74). Such tools are needed when a gifted student compiles an accumulation of knowledge into a finished product. The library becomes a learning laboratory for gifted students.

Research indicates that "more boys and girls should be given work of this sort and that more time should be devoted to doing it" (Wilson 1955:234). Specific topics should be pursued while using the library as a laboratory. Efficiency in these six areas of research should be the main goal of study skills (Wilson 1955).

1. Efficient card catalog use.
2. Use of magazine guides.
3. Principles of developing their own book collections and wise book buying.
4. Using a thesaurus and dictionary.

5. Locating and using maps.

6. Understanding audio-visual department.

Research skills and concepts learned become essential tools in thinking and learning (Torrance 65:71). Research conducted by Jablonski (1962) with 4th, 5th, 6th graders discovered that research terms were readily comprehended and several of the group produced useful research ideas and discoveries in the area of cancer research (Torrance 1965:72). Several step by step procedures have been established and tested that confront students with various researching methods. Research states that concepts and skills of research can be instructed to gifted students. The students should commence this working on this skill at a very young age. "Learning would be more exciting and the search for truth more rewarding" (Torrance 65:73).

GENERAL EVALUATION

This objective will be evaluated by one by-product research report from a group or an individual effort. The report will be evaluated on the basis of completeness of the topic covered and its general organization.

OBJECTIVE #7

THE STUDENT SHOULD INCORPORATE A CREATIVE PROCESS TO BRING SOMETHING NEW INTO EXISTENCE.

DISCUSSION

> To be practical, an education should prepare man for a work that doesn't yet exist and whose nature cannot be imagined. This can be done only by teaching children how to learn and by giving them the kind of intellectual discipline that will enable them to apply man's accumulated wisom to new problems (Silberman 1970:114).

Specific facts alone will not enable a gifted student to be productive in our society. Occupations and problems may no longer be in existence when the education of a student is over (Gallagher 1975:249).

There is a creative process that a person passes through to his/her final production. Many stages have been suggested in this field, however the most widespread model is the four stage process proposed by Wallas (1926). The four stages are:

1. Preparation: The problem is investigated from all directions.
2. Incubation: This is a subconscious state of thinking. The creative thinker is associating the problem with past and new information.
3. Illumination: This stage is when the thinker grasps an idea, concept, or solution related to the problem.
4. Verification: The idea, concept, or solution is proven to be valid or not valid in this stage.

These four areas need specific alotted time to function properly. Gifted students need sufficient time, beneficial and meaningful exercises to work through the process (Foster, ERIC 1979).

"Creativity does not occur without discipline, that is, discipline in the sense that an individual develops self-control and acceptance of responsibility for self." (Foster, ERIC 1979) Creativity has been considered the highest form of mental functioning (Torrance, Myers 1970:VII). Research indicates that deliberate process of creative thinking stages students have drastically improved their abilities to produce original ideas or objects. Creative thinking is not an innate ability that cannot be instructed (Torrance and Myers 1970:VII).

Teachers are the key to the creative process. An affective teacher of the creative process is one who uses proven strategies, however incorporates his/her unique inventions (Torrance and Myers 9).

In discussion concerning the environment, when teaching creativity, the necessity of a permissive atmosphere is essential. An alert guidance and direction, and abosrbed listening is the major ingredient the instructor must keep in mind (Torrance 1970:251).

GENERAL EVALUATION

This objective is perhaps the most difficult to evaluate. Research states creativities strong value in the education of

gifted, however little has been done in the creation of evaluation devices. The Reach (Minn.)

OBJECTIVE #8

THE STUDENT WILL IMPROVE HIS/HER SKILLS ENCOMPASSING SENTENCE STRUCTURE, PUNCTUATION, GRAMMAR, AND SENTENCE VARIATION.

DISCUSSION

Even though gifted students can generally read highly sophisticated material, their writing abilities are considerably less comparable (Mindell and Stracher 1980:72). Writing is an adjunct to reading in gifted programming. Gifted students have the capacity to differentiate between sentence forms and using different sentence patterns (Mindell and Stracher 1980:73). The potential for profound writing is inevitable with these children, therefore the developing details such as indenting, transitional words, topic sentences are essential to the final product. One of the top priority goals for the instructor of the gifted student is to enable the writer to write clear, lucid paragraphs. Understanding every element within a paragraph is essential (Mindell and Stracher 1980:74).

GENERAL EVALUATION

The evaluation of this objective will be to have each student submit through school newspapers or periodicals an article to be published.

OBJECTIVE #9

THE STUDENT WILL SYNTHESIZE HIS/HER EXPERIENCES WITHIN THE CONTEXT OF CHANGING BEHAVIORAL COMPONENTS. THE STUDENT WILL BE PRESENTED WITH A SURVEY OF GLOBAL FUTURE ISSUES.

DISCUSSION

Change is the process by which the future invades our lives (Whaley). Gifted students should have the opportunity to change a given situation. The study of futures enhances a student's personal and global perspective. The study of change requires certain skills be mastered to make students aware of both contemporary issues, their roots and future possibilities (Whaley). Researchers state that the future should be granted equal time with studies of our past (Torrance 1974). The reasoning behind this push deals with the explosion of knowledge. If gifted students become acquainted with our rapidly changing society, perhaps when they become leaders and decision makers, this change will not be so shocking (Torrance 1974). The future can be made very realistic. Drama, using future projections, was recommended for gifted elementary students. This model proposed by Torrance and Myers serves the process properly (1970):

1. Define the problem
2. Establish a situation or conflict
3. Casting the characters

4. Brief all the actors and audience
5. Act out the situation (15 min - using drama techniques discussed in Objective #4)
6. Cutting the action (episode comes to conclusion)
7. Analyzing the behavior performed
8. Making plans for further testing of ideas for new behavior.

The use of dramatics with this particular objective allows the student to go beyond the thought level of a given situation and exposes his articulation of fears and anxieties on a given behavior (Torrance 1970).

GENERAL EVALUATION

The evaluation of this objective requires a group performance. A future problem will be given and the students will display their ability to fuse their personal concerns with the future. Individual contributions, key environmental words, originality, and their final analysis of the problem will be the specific elements examined.

OBJECTIVE #10

THE STUDENT WILL INCREASE THE COMPREHENSION, SPELLING, AND USAGE OF AN EXTENSIVE VOCABULARY.

DISCUSSION

Gifted students should be exposed to an abundance of new words. The usage of new words and their diversity of meanings is an important element in the education of the gifted student (Mindell and Stracher 1980:73). The most important tools in this objective are the thesarus and an unabridged dictionary. Both of these references should be accessable in the classroom at all times (Mindell and Stracher 1980:72).

GENERAL EVALUATION

The evaluation of this objective requires that 100 words be properly spelled, defined and used in a sentence during a one school year period of time.

ANNOTATIONS

Bagford, Jack, Talented and Gifted: Forgotten Child, Educational Resource Information Center, ED 210 668, International Reading Association Meeting, Des Moines, Iowa, October 24, 1981.

"Gifted readers have instructional needs which vary greatly from the norm." Jack Bagford distinguishes the first grade gifted reader from the sixth grade gifted reader. There are certain developmental differences which deem it necessary to adopt guidelines for gifted reading programs. Content and value should be emphasized. Since we are nurturing the leaders of tomorrow they need the knowledge to base decisions that will benefit our society. Gifted readers should also be grouped by academic ability. Areas such as creative reading, synthesis, problem solving, higher cognitive ability skill should be an integral part of the curriculum. A strong emphasis should be placed on extending the students' vocabulary. Gifted students will benefit from exposure to classic literature. Insipid content is a measurable waste of time for these students.

Ehrlich, Virginia Z., The Astor Program for Gifted Children Pre Kindergarten Through Primary - Five Years Later - Evaluation and Problems, Annual International Convention CEC, Dallas, Texas, April 1979.

This paper described a follow up evaluation which substantiates marginal progress in a gifted program. The programs were established for the sake of research in gifted programming. The intellectually gifted students in an average range of 135 I.Q. was accepted into this program. 66% of the parents felt as if the children were more sociable, and happier and 73% felt that their child was more interested in school. 89% of the students had acquired more friends being grouped with other gifted students. Total mathematics and reading improvements were made.

Lavor, C. Lym, "The Effect of Participating in a Resource Room Enrichment Program on the Cognitive Skills - 4-6," American Emotional Research Association, ED 191 212, April 1980.

Lavor stated that the evaluation of an academically gifted program is a logistical problem dealing with testing instruments which do not evaluate the specific skills taught with the curriculum. This report deals with a resource room program in Dallas. The 4-5-6 grades in 65 elementary schools were pre and post tested on the Cognitive Ability Test, CAT. These students had been previously identified as academically gifted. "Statistical tests of significance indicated the program produced accelerated development of cognitive skills dealing with the manipulation of verbal, numerical, and spacial symbols." This program did not serve only the intellectually precocious students. There procedure allowed for high average ability students to work into the program. The program stressed problem solving and reasoning skills. The percentile rank improvement ranged from 3 to 16 and all tests were positive. The largest improvement area was fourth grade, where there was a considerable increase in nonverbal scores.

Nirman, Norman, "Education of the Gifted in the 70's," Autumn 1971, Gifted Child Quarterly, p. 217.

Norman Nirman stated that the gifted child is often more isolated in the regular classroom where he is usually forgotten than he would be in a special designated class. A gifted student should be provided with these basic opportunities from the school system. An environment in education that is not resented. Extension of curriculum appropriate to higher level thinking skills. Examples: elementary geometry, foreign language, sociology and anthropology for grades 1-6. Interaction with qualified gifted teachers. In other words, teachers that have an extensive background in gifted materials and resources. An educational environment with intervention. This provides the student to be able to evaluate, certain policies, theories, and society's actions. Exposure to the communities leaders who show gifted qualities to model. Extensive researching skills. Activities aiding their self-concept.

Pilon, Barbara, "Words' Worth," Gifted Child Quarterly, Vol. XV, No. 1, Spring 1971, p. 23.

The richness of a gifted student's language will directly influence his success in the language arts area. Humor is one characteristic of creative verbal people and therefore a logical base to work on with gifted studies. The possibilities of using their abilities, creativity, and the English language with humor as a base is phenomenal. Thousands of articles have been published emphasizing the critical role a person's vocabulary contributes to his overall language facility (Dale and Razik 1963). Pilon reviews many games and activities on the market that increases a gifted student's vocabulary creativity.

Treffinger, Donald, Renzulli, Joseph, Feldhusen, John, "Problems in the Assessment of Creative Thinking," Volume 5, No. 2, Second Quarter, 1971.

The concept of creativity in past years has become a term used as a catchall. The vast number of problems not yet answered in this area has intensified the curiosity of researchers. This paper, written by three psychology professors, provides the reader with two basic assumptions. One being that the creative process is complex and secondly that creativity does exist in man's behavior in which researchers have only tapped the surface of understanding. The work of J. P. Guilford, "Structure of Intellect," model (1967), was used to describe cognitive abilities which correlate to creativity. Torrance's (1966) testing device in which creativity is evaluated using the variables fluency, flexibility, originality, and elaboration is termed in this paper as being broad and composed from the best of theory available. The problems in assessing creativity is in correlation to their relevance and criteria of their answers. The final conclusion of this article basically stated that the study of creativity, its instruction and assessment, is the classic case of the "blind leading the blind."

Vida, K. Louisa, Children's Literature for the Gifted Elementary School Child, Educational Resources Information Center, ED 159 620, International Reading Association, 23, Houston, Texas, May 1978.

Vida presented a literature program that meets the needs of the precocious reader. The program was divided into five sections including poetry, tragedy, biographies, realistic fiction, and creative reading. The importance of successfully meeting the literature needs of these students is tremendous. Gifted students need to acquaint themselves with our literary history and learn to appreciate fine literature. The main ingredient of this program was to allot time for each student to read independently, especially the classics. Literature also enhances creativity. Reading creatively helps students generate unique ideas, make valid decisions, and formulate intelligent responses. Vida also included research in the area of success of gifted students that are serviced. Ninety percent of these children enter college, thirty percent graduate from college, twenty percent of that previous number graduated with honors, and sixty percent of the college graduates go on to do graduate work in their field of expertise. Vida stated that this brief background data on gifted students displayed their drive and commitment to life's challenges.

Walker, Thomas M., "Media Services for the Gifted Learner," School Media Quarterly, Summer 1978, p. 258.

Literature of gifted education should be analyzed by media specialists. Instruction in media and library skills should be an integral part of any gifted program. Walker discusses the role of the media specialist in the realm of gifted education. Walker summarizes key authors of gifted instructional strategies such as James Gallagher, who has categorized gifted programs into three areas; Joseph Renzulli, who comprised an enrichment strategy which is divided into: general exploratory, group training, and individual and small group investigations; and Julian Stanley from Johns Hopkins University. Nearly all programs are based on enrichment type models of an accelerated type model. Most of the curricula is informal structured and unwritten. Teaching methodology is an extensively investigated area. The literature on this subject is extremely unprecise. The literature does agree in one area. Discovery and inductive methods of instruction are appropriate for gifted students. In conclusion, Walker feels as if the media specialist is an important component of the design, evaluation, and reading guidance for gifted programming.

Khatena, Joe, "What Schooling for the Gifted," Gifted Child Quarterly Vol. 27, No. 2, Spring 1983.

Khatena discussed the choices of differential curricula for the gifted. Khatena expressed the entire design of gifted curricula as having 4 major steps. He states the first one as being the promotion of civic, social and personal adequacy, the second was the knowledge of the foundations of civilization, the third as being the study of classics and the fourth as being "the instruction in ideal moral behavior with personal and social adjustment." Gifted curriculum is a balance situation between breadth and depth, specificity and generality, routine and variety, conservation and creativity. Khatena scans the entire development of gifted education and reflects on what many researchers expressed about the future. Interdisciplinary activities, research on futures, synectics, and sociodrama are all areas that will be dealt with extensively in the future. He also discussed the importance of study the lives of other gifted individuals to determine what brought about their eminence.

Maxwell, Sue, "Museums Are Learning Laboratories for Gifted Students," The Council for Exceptional Children Vol. 12, Summer 1980, 154 pp.

This article discussed the impact of our museums and related organizations on the education of the gifted. Museums are an unlimited source of material that stimulate and provide these students with topics and information, not always available in a classroom situation. Maxwell discussed in length the current usage of the Chicago facilities, such as; Field, Shedd Aquarium, Adler Planetarium, Lincoln Park Zoo, Art Institute, Chicago Historical Society, and Chicago Architecture Foundation, and their productive role in the education of the gifted. Several considerations must be made before establishing a program with a museum or community related organization. (1) The institution must set goals of instruction. (2) Students need to have long range interests in project. (3) School should have the same basic goals as the museum. (4) Consider prerequisites for program. (5) The museum staff involvement should be approved by school program.

Mindell, Phyllis, Stracher, Dorothy, "Assessing Reading and Writing of the Gifted: The Warp and Woof of the Language Program," Gifted Child Quarterly Vol. 24, No. 2, Spring 1980, 72 pp.

Mindell proposed a set of diagnostic tools by which the assessment of reading and writing abilities may be determined. The model works under 4 basic premises: (1) The goal of any gifted language program is to enable students to think and act creatively. (2) Creative thought and action are a basic language education. (3) The students functional abilities must be evaluated. (4) Ideal instructional devices for such a program is the unit. This enhances the student observation of similarities and differences. Mindell states that the severe lack of assessment tools for reading and writing subareas has been an obstacle for appropriate differentiated curriculum. Acceleration, breadth, and creative opportunities must be emphasized. Nonstandard and standard assessment tools must be used to take the already advanced student to his fullest potential.

MATH SECTION

"THE GIFTED SHOULD LEARN TO SEE A
PROBLEM WHERE NO ONE ELSE HAD SEEN IT"
LEWIS TERMAN, 1947

DIFFERENTIATED MATHEMATICS CURRICULUM

DISCUSSION

There is no question that gifted students need extensively differentiated curriculum in the area of mathematics. Gifted students who studied mathematics at their own age level show a reported decline in their mathematics attitude (Wheatly 1980) (Martinson 1972), implied that gifted students working in math texts with the regular classroom are actually reviewing materials and concepts 2-3 years previously obtained. Stanley (1977), states that gifted mathematics students will become bored, frustrated, and excessively meticulous. Therefore, neglecting the acceleration and content of a differentiated math curriculum is stifling our most valuable natural resource.

Mathematical thinking is somewhat diverse from other types of thinking processes. There are distinctive characteristics that should be identified when selecting gifted students for mathematical programming (Osborne 1981:18). Primarily, students are selected on measures of general mental ability and achievement levels. These measures are generally strong evidence for provision in programming (Osborne 1981:18).

There are however, several characteristics that prove to be excellent indicators of students' problem-solving abilities (Osborne 1981:18).

1. An excellent appreciation of uniqueness existence and univerality. This is an innate talent which enables a

student to analyze a problem and determine if any of the characteristics are alike or if all of the characteristics are completely different.

2. An inclination to see mathematics in the ordinary and common place. A study conducted in Russia involved gifted mathematics students. The study indicated that these students could integrate mathematics into their everyday environment.

3. Flexibility in considering alternatives in problem solving and a willingness to curtail behaviors and processes that do not appear productive.

The gifted mathematics student can differentiate between the more powerful concepts and the math concepts that are not so important. These behaviors are not so visible to the instructor. Therefore awareness of the attributes are essential. Mathematics programming has five basic criteria (George 1976:247).

1. Identification of qualified mathematically oriented and high apt students through appropriate difficult tests of mathematical and verbal reasoning ability.

2. The selection of a bright dynamic assertive teacher who can create an atmosphere of fun and productivity while introducing the student with challenging materials at a rapid pace.

3. Compatible learning styles between student and teacher.

4. Development of good study habits, learning new materials by doing homework well.

5. Voluntary and self motivated student participation.

The key to the entire concept of mathematics programming is independent learning (Bartkovich and Mezynski 1981:73). The assumptions is that identified gifted math students, if self motivated, will progress to explore and study to meet their superior potential. Acceleration is promoted to make it possible for advanced topics and concepts to be instructed (Wheatly 1980: 3). Allowances must be made for different interests and understanding levels within the program. The entire mathematics program must be flexible.

A diagnostic math test must be administered to students participating in an accelerated program. This will determine the rate of acceleration of each individual student and the individual strengths and weaknesses. Mathematical strategy games should be given to the students because they enhance relaxation in problem solving strategies (Gensley 1974:2).

Project DEEP

Identified students in Project DEEP are given the KEY Math Diagnostic Test (1971). This test determines an overall math grade level achievement score and all apparent strengths and weaknesses. The students who meet the criteria of two grade levels beyond the current age level of the student, will be mathematically programmed accordingly. Each student works independently using appropriate level tests and supplementary materials which aid the instructor of the various higher level objectives in the program.

INSTRUCTOR DISCUSSION

The main goal of the instructor is to organize a learning environment that is conducive to the development of an independent worker (Wavrik 1980:172). Wavrik implied that gifted math curriculum should work under the premise of a nonstandard philosophical basis. The instructor therefore, serves as a guide and facilitator instead of a constant lecturer. The teacher plays the supporting role. Wavrik (1980:170) states 5 of these basic philosophies essential to the groundwork of gifted mathematical programming.

1. Mathematics is more a subject of ideas than a subject of facts.

2. One can only understand an idea when one has in some measure thought of it oneself.

3. Ideas cannot be transmitted or transferred from the mind of the student. Understanding must be created.

4. People learn by being in an environment that stimulates and supports their thinking.

5. The main goal of mathematics instruction is to produce students who can solve problems. This means they can:

   a. analyze the problem

   b. use their understanding of mathematical ideas to devise one or more plans of attack

   c. continue to work interactively with the problem until a method is devised to solve it.

Wavrik continues to state that math works in cycles. These cycles with the gifted students are experience, abstraction of concepts, and symbolic representation of concepts.

In the area of longitudinal research in the area of math programming for gifted, the SMPY Program has provided substantial data. The SMPY Program, Study of Mathematically Precocious Youth at John Hopkins University, under the direction of Julian Stanley, allows a gifted math student to progress in math areas at a fast pace. Research states that four and one half years of precalculus can be instructed in approximately 120 hours (George 1976). Classes were of homogenous groupings.

Project DEEP integrates the rapid acceleration ideas proposed by the SMPY Program and integrates the nonstandard concepts of John Wavrik to establish their differentiated curriculum. The objectives instructed within the math curricula are intertwined with the knowledge that continuous longitudinal acceleration is taking place as to provide the students with further exploration of advanced topics. In accordance with the language arts section, the math section is a continuously regenerating section with activities and general units for instructional purposes.

OBJECTIVE #1

THE STUDENT WILL FOLLOW A STEP BY STEP PROCEDURE TO DEVELOP EXCEPTIONAL PROBLEM SOLVING TECHNIQUES.

DISCUSSION

The area of problem solving is perhaps the most researched area in mathematics. It is suggested that the most vital reason for mastering mathematics concepts is to become a good problem solver (Blake 1977:4191). Research indicates that successful problem solvers have positive attitudes, task commitment, field independence, divergent thinking skills, spacial ability, verbal reasoning ability and strong overall mathematical achievement (Blake 1977:4191). A student's mathematical achievement directly influences their problem solving abilities. Problem solving performance is also directly correlated positively with self-esteem.

Problem solving techniques are composed of 4 categories, subject variables, task variables, process variables and instructional variables.

The subject variable is the outside stimulus from the student that he self imposes on a problem. Task variables deal with actual readability of the problem. Research indicates that the length and number of familiar words in the sentences has a direct influence on the problem solver. Process variables have been extensively researched by G. Poly (1972). Heuristic processes were the essence of variance in solving a problem.

The last category in this area is instructional variables. These are varied types of "acting out the problem." The use of calculators in this process were found to be beneficial (Wheatly 1980:138).

Problem solving focuses on the development of high quality solutions. Therefore, it is of most importance to encourage good problem solving behavior (Maier 1970).

GENERAL EVALUATION

This objective will be evaluated by the major factors included in their solved problem. These major factors are; perceiving relationships, listing alternative outcomes, listing characteristics of a goal, and producing a logical solution (Guilford and Hoepfner 1971:104-107).

OBJECTIVE #2

STUDENTS WILL BE EXPOSED TO THE THINKING SKILLS OF LOGIC WHICH ARE ESSENTIAL FOR CRITICAL REASONING.

DISCUSSION

"Because the teaching of logic aims to develop the powers of reasoning, it is particularly important that young people with superior innate abilities be provided with the skills necessary to maximize their intellectual potential." (Weinstein 1983:83)

It is suggested that the world is interpreted effectively when people use logical thinking. Independence formulates, propaganda is overcome, and logical thinking can differentiate between what is valid and reliable. These outside powers, which our society holds, needs to be evaluated by the logical person (Weinstein, Laufman 1983:186). Gifted students should be provided with the tools which will enhance their logical thinking. Gifted students are the best candidates for such attainment. Schools rarely succeed in developing their fullest capacity (Weinstein and Laufman 1983:186).

The swiftness of reasoning is extremely important in the ability to move through mathematical thought. It is essential that the method of solution to a problem is seen immediately and the student can then work through the logic of their rationale (Heid 1983:221).

Krutetskii's studies indicate that the gifted mathematics student omits necessary links in the logical train of thought.

Krutetskii suggests that logic instruction will be a comprehensive hallmark in problem solving areas for these students.

GENERAL EVALUATION

The student will be evaluated on his/her ability to differentiate between valid and unreliable information.

OBJECTIVE #3

THROUGH TEXT BOOK USAGE, ACCELERATION WILL BE PROMOTED TO APPROPRIATELY MEET THE BASIC COMPUTATIONAL NEEDS OF THE STUDENT AND TO ALLOW TIME TO PURSUE HIGH INTEREST MATHEMATICAL TOPICS.

DISCUSSION

"Mathematically gifted students tend not to tire when doing mathematics" (Heid 1983:224). Researchers state that even young math students are able to work much longer than the average student and show no reduction in computational facility. The program itself in mathematics must be structured in a manner to promote textbook independence. Each child working at their own pace within his/her computation level will be able to progress at a faster pace. This faster pace of digesting skills makes time allowances for special mathematics interest areas which rely on these basic facts previously obtained.

Appropriateness of drill materials must be an important consideration on the instructor's part. Some gifted math students can master a concept without any basic drill assignment. Individual instructed content area can be covered more rapidly, more broadly, and in greater degrees of abstraction, formalism, and rigor. Mathematics is not a content area where enrichment is the only adequate curriculum alternative (House 1983:231). The gifted student who is so tenderly treated stands the chance to grow both in depth of knowledge and in ability to work with freedom from supervision (Heid 1982:225).

GENERAL EVALUATION

The Iowa Basic Cognitive Ability Test will be administered to determine the students' mathematics progress.

OBJECTIVE #4

THE STUDENT WILL USE COMPUTERS TO DEVELOP AN UNDERSTANDING AND AWARENESS OF BASIC COMPUTER SKILLS.

DISCUSSION

Computers are an integral part of any math program. Gifted students can become discoverers, rather than passive receivers of knowledge. Research states that writing, processing and studying computer algorithms will increase the student's development of mathematical computational skills, problem solving abilities, and mathematical concepts (Gress 1981:39).

The computer allows for 3 important skill areas to develop (Gress 1981)

1. to be an efficient delivery system
2. to be able to construct models of problems
3. to enhance manipulation of variables

A student's style of learning becomes self directed with a computer usage. The computer is a tool that allows knowledge previously accessible only through formal processes to be considered concretely. One of the most beneficial areas of computer awareness is the opportunity for beginning students to create basic programs. "Programming is an excellent topic in an enrichment sense, since gifted students can progress at their own rates" (Hershberger and Wheatley 1980:39).

Educational computer games, if they are of the generally high-level type can help facilitate problem-solving techniques.

GENERAL EVALUATION

The student will be evaluated on his performance operating a computer and writing a simple program.

ANNOTATIONS

Dover, Arlene, "Computers and the Gifted: Past, Present, and Future," Gifted Child Quarterly Vol. 27, No. 2, Summer 1983, 81 pp.

"The gifted are one group of students who bring a powerful store of talents to their interaction with computers." Because of gifted children's traits they have the ability to make a significant contribution to the development of computer technology. Computer inclusion, in a differentiated math curriculum, has displayed a highly ranked success record. In 1963, a formal computer program was introduced in the United States by the National Science Foundation. Their research indicates that during a six year program these improvements took place; students advanced rapidly in logic and geometry, improvements in basic mathematical skills, students felt work was natural and easy, and provided resources otherwise not available. In the 70's, research showed that computer programming facilitated the development of thinking and learning skills.

Gensley, T. Juliana, Teaching Gifted Children Mathematics in Grades Four Through Six, Educational Resource Information Center, ED 100 103, California State Department of Education, Washington, D.C., 1974, 44 pp.

This document was intended for teachers instructing gifted mathematical students. Gensley states three factors necessary for proper instruction of this population. Gensley feels a mathematics specialist is required for the program, an analysis of individual student abilities, an interdisciplinary use of math principles, and opportunities for use of mathematical games for a successful program. Research notes that working with 10 and 11 year olds that they are able to analyze intellectual reasoning and are interested in concepts related to logic.

George, C. Williams, "Accelerating Mathematics Instruction for the Mathematically Talented," Gifted Child Quarterly Vol. 20, No. 3, Fall 1976, 246 pp.

This study shows the importance of homogeneous grouping. The Study of Mathematically Precocious Youth (SMPY), has been working since 1969. The most successful component of this program is their fast paced accelerated math classes. Data showed that four and one half years of precalculus was instructed efficiently to seventh grade students in approximately 120 hours. Fifteen of the original class of 23 successfully completed the course. This particular program's success promoted many school systems to adopt the accelerated model of instructing math.

Heid, Kathleen, "Characteristics and Special Needs of Gifted Math Students," Mathematics Teacher Vol. 27, No. 4, April 1983, 221 pp.

Gifted students, during their educational maturing, display their ability to "think flexibly." Gifted students have the ability to switch from one method of doing a problem to another diverse method. Research states that gifted math students will develop a distinct tendency to find the "clearest, easiest, and most logical solution to a problem." Gifted math students do not tire as readily as the average student when working with mathematical computational problems. Heid discussed five basic generalizations of the mathematically gifted student. They are: a tendency to deal in the abstract and to generalize broadly and rapidly, a tendency to look at problems through their own mathematical structure, remembering the best structural properties, flexibility in thinking, a need to find the most elegant solution, and a tendency to view the world through a mathematical eye.

Hersberger, James, Wheatly, Grayson, "A Model for a Gifted Elementary School Mathematics Program," Gifted Child Quarterly Vol. 24, No. 1, Winter 1980, 37 pp.

The gifted mathematics student is usually performing two to five levels above their actual grade placement. Wheatly recorded a decline in math attitude when the student was not properly programmed. These negative attitudes will have a long lasting detrimental effect on the student. Other research shows us that the top 2 percent of fifth grade students are at a formal-operational level yet have the reasoning abilities to learn second year and precalculus courses. General models that have been proposed for gifted programming do not fit within the organization of a math curriculum. Therefore, the math structure must be flexible. Advanced topics must be introduced to keep motivation high.

House, Peggy, "Alternative Educational Programs for the Gifted Students," Mathematics Teacher Vol. 76, No. 4, April 1983, 229 pp.

House examined the alternatives available to meet the needs of this population. All alternatives discussed, emphasized curricular modification of some sort or another. The most researched form of modification was acceleration. Acceleration allows students to be exposed to topics in mathematics that they would not usually see for several years. All gifted students should be individually instructed and tested at their appropriate level, no matter where that grade level may be. House discussed the usage of mentors. Released time was granted to students on a regular basis to explore diverse fields of mathematics. Example of a mentor given was a technical engineer working for a large company. Business can benefit from a strong community relationship as well as the school system relating to their expertise in a specialized area.

Nadel, Sybil, The Education of Gifted and Talented - A Basic Overview. Educational Resources Information Center, ED 161 223, New Jersey State Department, 1978.

Attributes frequently are listed for teachers dealing with gifted students. Specific traits discussed were a growing knowledge of models and strategies and group dynamics. The key to any program is the effectiveness of the teachers. There is a uniqueness of this population which needs special sensitivity. The individuals that deal with this uniqueness will make great contributions to the educational field. Nadel suggests several strategies that will enhance a curriculum, such as advanced electives. This would enable the elementary student to explore such areas as anthropology, aerodynamics, and unusual content areas.

Osborne, Alan, "Needed Research Mathematics for the Talented," Arithmetic Teacher Vol. 28, No. 6, February 1981, 81 pp.

Osborne discusses the distinctively different characteristics of mathematical thinking, compared to other types of intellectual activities. These characteristics need to be taken into consideration when designing gifted curriculum. When identifying students for this specialized program other considerations beside general mental ability must be taken into consideration. A student must have an appreciation of uniqueness, existence and universality. This area deals with patterns of reasoning and indirect arguments. Another quality to examine when identifying these student uses an inclination to see mathematics in the ordinary and common place. This area relies on the child being able to place mental structure on a given situation. Lastly, Osborne discussed a certain flexibility in considering alternatives in problem solving and a willingness to curtail behaviors and processes that do not appear productive. Osborne noted the desperate need for extensive research in the area of mathematics.

Payne, Joseph, "The Mathematics Curriculum for Talented Students," Arithmetic Teacher Vol. 28, No. 6, February 1981, 18 pp.

"The mathematical thinking and reasoning goals should be infused in teaching all facets of the subject matter." Payne presented 2 major cautions when incorporating a gifted program. Of major importance is the certification of the teachers and of second importance was the amount of time the student worked independently. Osborne stated that gifted students working at their appropriate levels should be given ample time to discuss mathematics with their peers. An in-depth treatment of basic content should be included with a direct emphasis on problem solving. The curriculum should stress the understanding of computation rules.

Wavrik, J. John, "Mathematics Education for the Gifted Elementary Student," Gifted Child Quarterly Vol. 24, No. 2, Fall 1980, 169 pp.

Wavrik discusses the philosophy of teaching and designing a mathematics curriculum. He discusses a nonstandard and standard philosophical basis. The nonstandard basis is strongly recommended for the curriculum of the gifted math student. Specific areas are suggested to include in the curriculum:

1. Geometry, compass construction, coordinates, equation of lines
2. Probability and statistics, collecting and analyzing data.
3. Numbers and number theory, negatives and decimals
4. Functions and their graphs
5. Topology and combinatorics
6. Scientific and business applications.

Wavrik also discusses the useage of computers to teach the various topics previously listed.

Weinstein, Joshua, and Laufman, Larry, "Teaching Logical Reasoning to Gifted Students," Gifted Child Quarterly Vol. 24, No. 4, Fall 1980, 186 pp.

The study of logic is essential to any gifted curriculum. High ability students need this skill before they can properly develop critical thinking skills. Decision making also relies on the fact that one can reason (Lamm's 1976). Research indicated that when people interpret the world effectively, they are using their logical reasoning skills. Through logical reasoning one is able to analyze, understand, and see independently the world's propaganda. Lamm states, "If this weakness of reasoning skills exists because students are not taught properly, then the curriculum must be revised to facilitate this process (1976).

Wheatly, H. Grayson, "A Mathematics Curriculum for the Gifted and Talented," Gifted Child Quarterly Vol. 27, No. 2, Spring 1983, 83 pp.

Wheatly stressed a major plan for the future. Problem solving and stating will be the most important tool when dealing with computers. The gifted must feel comfortable with computers and be able to write creative and standard programs. Wheatly stated that textbooks alone will not develop these higher level computational skills, they merely over emphasize computational rules. The perfect program has a balance between computational acceleration and time spent on instructional strategies in productive thinking. A survey conducted of current textbooks indicated that 70% of textbooks deal with computation and memorization. Wheatly states, "This approach is particularly devastating for the gifted." Probability is a topic that needs recognition. Wheatly stresses the importance for these students to consider the chance of events occurring in non-absolute terms. Algebra should no longer be considered a high school course. The study of concepts of variables, signed numbers and equations are all areas which should be introduced in the elementary division.

OBJECTIVE

THE STUDENT WILL BE GIVEN AN EXPOSURE TO TWO FOREIGN LANGUAGES, FRENCH AND SPANISH.

DISCUSSION

The language system of a culture is its most important component (Soffietti 1961:224). To understand our world neighbors is to first understand the language. The gifted are intellectually equipped to achieve a satisfactory degree of valuable foreign language exposure. Learning a foreign language should commence in the beginning of the gifted students programming. Research shows that the optimum years for introducing a language is from five to twelve years of age (Soffietti 1961: 224).

Little information is available about specifically designed foreign language programs for gifted students. Foreign language is however an enrichment for the students total language program.

The desirable outcomes of instructing a foreign language are much broader than enabling the student to speak in a language other than his own. A list has been compiled by William Kaulfers (Soffietti 1961:249) that serves as a detailed guide to help meet the diversified needs of a gifted elementary foreign language class.

A. Promotion of travel

B. Appreciate foreign literature

C. Enjoy foreign correspondence

D. To promote foreign language as a vocational pursuit

E. Appreciate foreign music

F. Enjoy foreign celebrations, customs

Short instructional periods are recommended in the earlier gifted level. Numerous teaching aids are suggested as to constantly stimulate the young audience.

GENERAL EVALUATION

The student will be evaluated on his participation and cooperation in the group language instructional periods.

OBJECTIVE

STUDENT WILL UTILIZE COMMUNITY RESOURCES TO ENHANCE SPECIFIED HIGH INTEREST AREAS.

DISCUSSION

> We continue to confine gifted children too much in the self-contained classroom, when we should be freeing them for independent study in libraries, laboratories, and in the community itself. Much of the thrust of the best curriculum development involves breaking down the classroom walls and opening up to the child a variety of educational experiences, not necessarily inside the school grounds.
>
> We need to become much more flexible about this matter in our thinking. Gifted children are apt to be stifled if bored in their average class rate of learning. They are more responsible about carrying out tasks on their own; they profit more from outside experience, and they need more time to be alone or on their own. Community experiences with professional adults are particularly useful for gifted children, especially where the adult possesses some skill which the teacher cannot be expected to have. (Gowan and Torrance 1971:99)

Resources in the community must be utilized. Museums enable the student to have immediate contact with material resources (Maxwell 1980).

Project D.E.E.P. incorporates the philosophies of Gowan and Torrance concerning the community as a resource alternative. Presently Project D.E.E.P. will work with the Snite Museum at University of Notre Dame. This will be a premier program for the Snite Museum and for Project D.E.E.P. The students will use the museum in a classroom. An art appreciation course will be instructed over an eight month period. There will be objectives instructed (Appendix D).

EVALUATION

A pre and post test will be administered covering all material instructed in the eight month period.

CONCLUSIONS

The gifted are children who require differentiated programs and curriculum beyond those normally provided by the regular school program. Project D.E.E.P. in the Mishawaka School System recognizes this need to provide a qualitatively different curriculum to maximize gifted students' intellectual and personal growth.

Project D.E.E.P. has based their instructional objectives on sound research and past and present literature. Language arts and mathematics are the two most prevalent subject areas discussed, therefore the majority of objectives stem from these areas. Researchers state the need for a structured curriculum of a nonstandard basis. This framework will provide teachers with general areas to commence their specific instructional activities. Research indicated a strong push towards problem solving skills in language arts and mathematics. Computer awareness was also a highly discussed item for the future. Both areas were included in this handbook. Outstanding programs have been documented to show considerable growth in gifted students. The belief that these students will then turn around and benefit our society makes programming essential. D.E.E.P. hopes to provide the gifted student with the tools to aid our society. Joe Khatena stated, "Be the catalyst of the mystery and magic of existence, for in the creativity of your child may be a magnificent future for all."

RECOMMENDATIONS

It is recommended that:

1. An overall program evaluation is devised to augment a productive and constantly differentiated program for the gifted.
2. Resource teachers are provided with journals concerned with the education of the gifted.
3. The specific evaluation of student work be performed in a nonstandard process of checklists and informal and formal conferences.
4. Computer specialists are used as mentors when Objective #5 (computer programming) is being instructed.
5. Constant public awareness is made of the program so as to enhance community support for the education of the gifted.

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APPENDIX

APPENDIX A

Resources for Assistance

Offices of the Gifted and Talented
U.S. Office of Education
Washington, D.C. 20202
202/962-4038

National/State Leadership Training Institute
on the Gifted and Talented
316 West Second Street, Suite 708
Los Angeles, California 90012
213/489-7470

ERIC Clearinghouse on Handicapped and Gifted Children
Council for Exceptional Children
1920 Association Drive
Reston, Virginia 22091
703/620-3660

The Association for the Gifted (TAG)
Council for Exceptional Children
1920 Association Drive
Reston, Virginia 22091
703/620-3660

National Association for Gifted Children
Route 5 Box 620 A
Hot Springs, Arkansas 71901
501/767-2669

The Gifted Child Research Institute
300 West 55th Street
New York, New York 10019
212/541-7059

APPENDIX D

Title of Program: Young Artists

Funding: The Snite Museum has offered a great deal of in-kind service as far as planning, facilitation, instruction and use of the facility. Mishawaka would be required to commit to round trip transportation to and from the Snite Art Museum, six (6) times throughout the 1983-84 school year, and one hundred dollars ($100.00) to be paid to the Snite Art Museum for paper goods consumed during six sessions. Approximately 55 gifted students would be served.

Staff Involvement: Both gifted resource teachers will be present during each of the six sessions.

Evaluation: Two comprehensive tests (pre and post) on appropriate levels will be administered to each group of students.

Overall Program Objectives: To provide a six month cohesive arts educational experience for all the students of the Mishawaka 1-6 DEEP Program. The basic material covered will be the same for grades 1 through 6 but will be adapted to challenge each age level appropriately. Each age group will have the same Staff Assistant tour guide throughout the program.

Outline and Objectives:

1. Ethnographic

   1st Section: Pre-Columbian and North American Indian.
   Objective: To introduce the students to the arts and cultures Pre-Columbian Mexico and South and Central Americas and selected North American Indian Tribes using the art and artifacts from the museum's collection.

   2nd Section: African and Oceanic.
   Objective: To continue the study of cultures other than our own through the exploration of objects from the African and Oceanic collections.

II. Elements in Art

1st Section: Learning to look.
Objective: To analyze various elements in art such as color, shape and composition through direct experience with artwork of various types and times. To experience looking at art as a learned skill.

2nd Section: Materials and techniques of the artist.
Objective: To learn to identify different materials and techniques in art. To discuss how and why history has influenced the development of these.

III. Religion and Myth

1st Section: Religious and mythological themes in art of the pre-scientific age.
Objective: To explore the religions and myths of ancient Egypt, Greece and Rome and to draw a connection with the concept of the contemporary artist as myth maker of the 20th century.

2nd Section: Christian imagery in art through the ages.
Objective: To discuss the above through investigation of devotional subjects, i.e. the Virgin and Child; narrative subjects, i.e., the annunciation; and Old Testament prefigurations of New Testament events.

Overview:

This educational experience would be Project D.E.E.P.'s first community based program. This is an excellent opportunity for a highly structured gifted curriculum to be offered at a minimal cost. This proposal was written in conjunction with Barbara Reinhart, Educational Coordinator of the Snite Art Museum of Notre Dame. Ms. Reinhart is enthusiastic to meet the needs of these special students in our community. Resource rooms, in their past visitations, have been very gratifying for the Snite Staff Assistant. This program would be an exceptional asset to the entire gifted curriculum.